United States Court of Appeals for the Federal Circuit

AVID TECHNOLOGY, INC.,

Plaintiff-Appellant

v.

HARMONIC, INC.,

Defendant-Appellee

2015-1246

Appeal from the United States District Court for the District of Delaware in No. 1:11-cv-01040-GMS, Judge Gregory M. Sleet.

Decided: January 29, 2016

GREGORY A. CASTANIAS, Jones Day, Washington, DC, argued for plaintiff-appellant. Also represented by DAVID B. COCHRAN, JOSEPH M. SAUER, Cleveland, OH; JOSHUA R. NIGHTINGALE, Pittsburgh, PA.

BORIS FELDMAN, Wilson, Sonsini, Goodrich & Rosati, PC, Palo Alto, CA, argued for defendant-appellee. Also represented by JAMES C. YOON; ROBIN L. BREWER, San Francisco, CA; GIDEON A. SCHOR, New York, NY.

Before REYNA, TARANTO, and STOLL, Circuit Judges.

TARANTO, Circuit Judge.

The jury in this case found that Harmonic, Inc. did not infringe two patents asserted by Avid Technology, Inc. On one of two claim elements that were the focus of the dispute at trial, the district court gave the jury a narrow construction based on what the court determined to be a prosecution disclaimer. We hold that construction to be incorrect. We also hold that the error on this central trial issue requires setting aside the non-infringement verdicts, which were general verdicts as to each patent, because Harmonic has not argued that the evidence compels a finding of non-infringement independently of the construction error. Avid therefore is entitled to a new trial on infringement, though satisfaction of this particular claim element is now settled because Harmonic has not here disputed Avid's contention that Harmonic's system satisfies this claim element when properly con-Avid has not, however, shown entitlement to more than a new trial, i.e., to entry of a judgment of infringement: the evidence does not compel a finding of infringement of the other claim element in dispute which at present is without a claim construction. Accordingly, we vacate the judgment and remand for a new trial.

BACKGROUND

Avid asserted two patents against Harmonic in this case—U.S. Patent No. 6,760,808 and No. 7,487,309. Both patents concern data storage systems that allow users to store and retrieve large files such as movies. The systems include three categories of components of particular significance here: multiple storage units that store data; a client application, which reads data from and writes data to the storage units; and a central controller that can perform various facilitative functions. A fourth component is an option: a centralized repository of addresses of data stored in particular units.

In the system described by Avid's patents, when a client wishes to store ("write") a file, such as a movie, the system splits the file into "segments." '309 patent, col. 8, lines 57–58. The segments are distributed among various storage units and stored in duplicate at different units (one primary unit and one backup) chosen "from the list of storage units available for storing the selected segment." *Id.*, col. 9, lines 12–14. The client sends each segment to two storage units. *Id.*, col. 9, lines 65–66; *id.*, col. 10, lines 1–3, 37–39.

The system creates and updates segment tables listing file segments and their storage-unit locations. *Id.*, col. 8, lines 46–52; *id.*, col. 10, lines 21–23. "Segment tables may be stored together, as a catalog. Catalogs may be stored on a catalog manager 49, at individual clients, at a central database, or may be distributed among several databases or clients." *Id.*, col. 7, lines 35–39. "[C]atalogs also may be treated as data of which copies of its segments are randomly distributed among the storage units." *Id.*, col. 19, lines 21–23.

The referred-to "catalog manager" is a "database, accessible by the [client] applications," containing "information about the data available on the storage units." *Id.*, col. 6, lines 54–57. (The catalog manager 49, in Figure 1, may be combined with another database called an "asset manager," also shown as item 49 in Figure 1. Id., col. 18, lines 51–55.) The catalog manager may play a role in monitoring availability of storage units for storage in the first place. "There are several ways to determine whether storage units are available, including polling the storage units, handling exceptions from the storage units, or by the storage units periodically informing an application or applications of their availability. In one embodiment of the invention, in addition to maintaining a catalog of segment tables for each file, the catalog manager 49 or some other client may monitor which storage units 42 are active in the system." *Id.*, col. 17, lines 52–60.

When a client wishes to retrieve ("read") a file, the client determines which storage units have the needed segments, and sends a request for a given segment to a storage unit, which transmits it to the client. *Id.*, col. 11, lines 4–19; *id.*, col. 20, line 52 through col. 21, line 21.

Claim 1 of the '808 patent is illustrative of the claims:

1. A distributed data storage system for allowing one or more client systems to access data, comprising:

a plurality of *independent storage units* for storing the data;

wherein the data is stored on the plurality of storage units in files, wherein each file includes segments of data and redundancy information for each segment, wherein each segment has an identifier, and wherein, for each file, the segments and the redundancy information for each segment are distributed among the plurality of storage units;

wherein each storage unit comprises:

means for maintaining information associating the identifier of each segment stored on the storage unit with the location of each segment on the storage unit;

means for receiving a request from one of the client systems for a segment of a file, wherein a request includes the identifier of the segment of the file; and

means, operative in response to a request from one of the client systems for a segment of a file, for retrieving the requested segment of the file from the storage unit using the information associating the identifier of each segment stored on the storage unit with the location of each segment on the storage unit; and

means for sending the requested segment to the client system.

Id., col. 28, lines 2–27 (emphases added). The two phrases we have italicized became the focus of this case. The parties have referred to the second italicized claim element as the "in files" element.

The accused Harmonic system, called "MediaGrid," is a distributed data storage system in which various storage units (ContentServers) store data with redundancy. The system includes a central controller (ContentDirector), which keeps track of the storage units and what segments of a file (slices) are stored on them, and storage units keep track of segment addresses within their own memories. J.A. 1881, 1876-77, 1883-84, 1909. A client seeking to retrieve the segments must ask the ContentDirector to identify the relevant storage units. Once the client has that information, the client deals directly with the identified ContentServers to obtain the segments, with the ContentServers themselves finding the needed segments within their memories and without the ContentDirector acting as an intermediary for the data transfer. See J.A. 2305, 2395, 2828.

In the prosecution history of Avid's patents, one piece of prior art played a role that is significant here—a patent issued to Boll, U.S. Patent No. 5,644,720. Boll describes a client interface (*i.e.*, a central controller) that receives a request from an application. '720 patent, col. 2, lines 45–58; *id.*, col. 2, lines 20–23. That request includes "a list of server attributes necessary to complete the transaction request," ranked in order of importance. *Id.*, col. 4, lines 27–31. The central controller selects which storage unit to use to fulfill the request. *Id.*, col. 2, lines 54–58; *id.*, col. 4, lines 20–23. The central controller sorts the available

storage units in order of preference. Id., col. 5, lines 14–17. If only one storage unit meets the criteria, the central controller transmits the storage-unit location to the application. Id., col. 5, lines 47–50. If more than one storage unit meets the criteria, the central controller randomly chooses one of the storage units. Id., col. 5, lines 50–61. The central controller then either allows the application to communicate directly with the storage unit, id., col. 3, lines 47–50; id., col. 7, lines 1–4, or "serve[s] as an intermediate link" connecting the application to the storage unit, id., col. 3, lines 50–52.

The district court gave the jury a claim construction of the "independent storage unit" claim element, basing that construction on statements Avid made in the prosecution history. It is undisputed that Avid properly preserved its objection to the construction. The other claim element at issue, the "in files" element, went to the jury without a clarifying construction, over neither party's objection. The jury rejected Harmonic's validity challenge to Avid's patents and found that Harmonic did not infringe.

Avid challenged the non-infringement judgment by post-trial motions. It argued that the claim construction regarding the "independent storage unit" element was incorrect and that, under a correct claim construction, that claim element is clearly met. And it argued that there was insufficient evidence for the jury to find non-infringement of the "in files" element. It sought at least a new trial on the first ground and judgment of infringement on the two grounds combined. Harmonic does not dispute that Avid duly preserved those contentions. The district court denied Avid's post-trial motions. Avid Tech., Inc. v. Harmonic Inc., 2014 WL 7206301 (D. Del. Dec. 17, 2014).

Avid appeals the non-infringement judgment. Harmonic does not cross-appeal the judgment rejecting its validity challenges; it also does not argue for vacatur of

the non-invalidity judgment if we agree with Avid's claim-construction position. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

We review the district court's claim construction de novo because it was based entirely on an intrinsicevidence determination about the meaning of the prosecution history, and not on any evidence about extra-patent understandings of language or about other facts. See, e.g., Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 841 (2015); Ethicon Endo-Surgery, Inc. v. Covidien, Inc., 796 F.3d 1312, 1323 (Fed. Cir. 2015); Teva Pharm. USA, Inc. v. Sandoz, Inc., 789 F.3d 1335, 1342 (Fed. Cir. 2015); Shire Dev., LLC v. Watson Pharm., Inc., 787 F.3d 1359, 1364 (Fed. Cir. 2015); Cadence Pharms. Inc. v Exela PharmSci Inc., 780 F.3d 1364, 1368 (Fed. Cir. 2015); MobileMedia Ideas LLC v. Apple Inc., 780 F.3d 1159, 1169 (Fed. Cir. 2015); Fenner Invs., Ltd. v. Cellco P'ship, 778 F.3d 1320, 1322 (Fed. Cir. 2015); In re Papst Licensing Digital Camera Litig., 778 F.3d 1255, 1261 (Fed. Cir. 2015). Infringement is a factual question, InTouch Techs., Inc. v. VGo Commc'ns, Inc., 751 F.3d 1327, 1338-39 (Fed. Cir. 2014), and we review judgment-as-a-matterof-law determinations de novo, asking, as the district court did, whether only one answer to that question is reasonable given the evidence admitted at trial. Frolow v. Wilson Sporting Goods Co., 710 F.3d 1303, 1308 (Fed. Cir. 2013); InTouch Techs., 751 F.3d at 1338; Graboff v. Colleran Firm, 744 F.3d 128, 134 (3d Cir. 2014).

A

The district court ruled that, during prosecution, Avid had disclaimed a system in which the central controller tells the client which storage unit the client should deal with during read and write operations. J.A. 89–90 n.1. On that basis, the court instructed the jury that "inde-

pendent storage units" means "storage units which are not centrally controlled and whose memory addresses are not globally allocated" and that "systems with independent storage units cannot use a central controller to access data, and, in particular, cannot use a central controller that identifies the storage unit on which data is stored in response to client requests." J.A. 39 (emphasis added); see Avid, 2014 WL 7206301, at *3.

We conclude that the district court erred. The demanding standard for finding a disclaimer is not met. We therefore reverse the claim construction given to the jury.

The prosecution history of a patent, though "less useful for claim construction purposes" than the claim language and written description, plays various roles in resolving uncertainties about claim scope. Phillips v. AWH Corp., 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc). When the prosecution history is used solely to support a conclusion of patentee disclaimer, the standard for justifying the conclusion is a high one. "[F]or prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable." Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325–26 (Fed. Cir. 2003); see Storage Tech. Corp. v. Cisco Sys., Inc., 329 F.3d 823, 833 (Fed. Cir. 2003) ("We therefore do not consider the applicants' statement to be a clear and unambiguous disavowal of claim scope as required to depart from the meaning of the term provided by the written description."). Where the alleged disavowal is ambiguous, or even "amenable to multiple reasonable interpretations," Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1359 (Fed. Cir. 2003), we have declined to find prosecution disclaimer. Omega Eng'g, 334 F.3d at 1325 ("[W]e have thus consistently rejected prosecution statements too vague or ambiguous to qualify as a disavowal of claim scope."); Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1327 (Fed. Cir. 2002).

The district court relied on two passages from an Avid submission during the prosecution history:

[T]he claimed system, by virtue of the "independent" storage units, avoids using a central controller to access data. In particular, storage units "receiv[e]...request[s] from one of the client systems for a segment of a file." Clients do not issue requests to a central controller that in turn identifies storage units that store the data and issues requests to storage units.

J.A. 582 (alterations in original) (italics added to emphasis key sentence now at issue).

In Boll, a client asks a centralized interface 24 to provide access to a server and receives from this interface an identity or connection data for a server to which the client is assigned. The client then performs its transactions with the assigned server. In contrast, the present invention relates to a distributed storage system in which data for a file is distributed among multiple independent storage units. Boll's assignment of a client to a server through a centralized interface for its transaction in [sic] contrary to the claim limitations noted above.

J.A. 583 (alteration in original). Those passages, however, are readily susceptible to a narrower reading than the one needed to support the district court's disclaimer conclusion.¹

¹ The district court mentioned an immediately preceding passage, in which Avid stated: "The claimed system, by virtue of its 'independent' storage units, avoids global allocation of the available storage. In particular, the storage units are independent because clients are

In the first passage, Avid stated that its system "avoids using a central controller to access data" and that "clients do not issue requests to a central controller that in turn identifies storage units that store the data and issues requests to storage units." J.A. 582. district court misread that passage. The first portion does not itself say what exactly "access[ing] data" entails; it is the second portion that identifies what Avid means. What that portion says, by its terms, is that a central controller is excluded if it performs both of two functions: it "identifies storage units that store the data and issues requests to storage units." Id. (emphasis added). language on its face does not exclude a central controller that performs only one or the other of the two stated functions—which would have been the meaning if the phrase had used "or" rather than "and." In any event, it does not do so clearly, as would be required to find a disclaimer of a central controller that merely identifies the storage units.

In the second prosecution-history passage, Avid distinguished Boll, stating that "Boll's assignment of a client to a server through a centralized interface for its transaction [is] contrary to the claim limitations noted above." J.A. 583. The district court read more into the passage than is clearly there and thus departed from the high standard for finding a disclaimer. Rather than disclaiming a system in which the central controller tells the client

aware of 'identifiers' of segments and storage units on which segments are stored. The 'location of each segment on [each] storage unit' is maintained at the storage unit on which the segment it is stored." J.A. 582 (alteration in original). The court read that passage as *not* clearly evincing the disclaimer at issue. J.A. 89–90 n.1. In this court, Harmonic does not rely on the passage as supporting the disclaimer at issue. We do not discuss it further.

which storage unit contains a given segment, the language can easily be read to be distinguishing Boll on the ground that each client application in Boll is connected to only one storage unit and conducts all of its transactions with that one storage unit. See '720 patent, col. 3, lines 30–34; id., col. 5, lines 47–50. In contrast, as described above, Avid's patents contemplate implementing "redundancy" by storing segments of a file on different storage units. See '390 patent, Fig. 1 (showing four segments (1–4) distributed among four different storage units).

In short, there was no clear and unmistakable disclaimer of central controllers that provide storage-unitlocation information for retrieving segments. The jury instruction limiting "independent storage units" in that way was incorrect.

В

That error, undisputedly preserved for review, concerned the legal standard (claim construction) for evaluating a central element of the infringement dispute: whether MediaGrid's ContentDirector, by supplying storage-unit-location information to clients seeking data, did too much for MediaGrid's ContentServers to meet the "independent storage units" requirement. requires at least vacatur of the verdict and a remand for a new trial unless we can conclude that the error was not prejudicial, i.e., was harmless. Because there was no separate jury determination of non-infringement on a distinct ground, the error in the instruction governing this central dispute at trial would be harmless only if a reasonable jury would have been required by the evidence to find non-infringement even without the error. See Ecolab. Inc. v. Paraclipse, Inc., 285 F.3d 1362, 1374 (Fed. Cir. 2002) (error is harmless if it "'could not have changed the result," i.e., if "the same verdict would necessarily be reached absent the error"); NTP, Inc. v. Research In Motion, Ltd., 418 F.3d 1282, 1311–12 (Fed. Cir. 2005) (abrogated on other grounds, see IRIS Corp. v. Japan Airlines Corp., 769 F.3d 1359, 1361 n.1 (Fed. Cir. 2014)); Seachange Int'l, Inc. v. C-COR, Inc., 413 F.3d 1361, 1381 (Fed. Cir. 2005); Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1201 (Fed. Cir. 2002); Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 853–54 (Fed. Cir. 1991); 11 Charles Alan Wright, Arthur R. Miller, Mary Kay Kane, Richard L. Marcus, Adam N. Steinman, Federal Practice & Procedure §§ 2558, 2886 (3d ed. 2015).²

But Harmonic does not even argue for that conclusion. Nowhere in its brief does Harmonic argue that the jury was required to find non-infringement—on any ground—even if the "independent storage units" element permits a central component that supplies storage-unit-location information to a client wishing to retrieve data from storage units. In particular, it does not argue that the evidence required a non-infringement finding based on the other claim element in dispute, the "in files" element; its only argument regarding the second at-issue element is that the jury could reasonably find that element not to be met by MediaGrid. Harmonic Br. 1, 49–64. That is not enough, because we cannot infer that the jury did so find. Similarly as to the "independent storage units" element itself: Harmonic nowhere argues that, even if the con-

The well-established standard for judging harmlessness of legally incorrect jury instructions, and thus determining whether a verdict must be set aside and a new trial ordered, differs from the equally well-established standard governing whether a verdict loser is entitled to a judgment in its favor as a matter of law (whether the evidence can reasonably support the verdict). See Juicy Whip, Inc. v. Orange Bang, Inc., 292 F.3d 728, 737 (Fed. Cir. 2002); Weinar v. Rollform Inc., 744 F.2d 797, 810 (Fed. Cir. 1984); Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893 (Fed. Cir. 1984).

struction given to the jury was wrong, the evidence still required a finding that MediaGrid lacks the required independent storage units, whether because of what the MediaGrid ContentDirector does or for any other reason. Harmonic argues only that the construction was correct and the non-infringement verdict was supported by substantial evidence. *Id.* at 1, 30–49. In short, Harmonic makes no argument under the proper legal standard to answer Avid's argument that the instructional error was prejudicial, requiring a new trial.

Avid actually takes its argument one step further. It contends that, once the legally erroneous narrowing of the claim construction is reversed, the evidence not only permits but requires a finding that the MediaGrid system meets the "independent storage units" claim element. Avid Br. 46–50. Harmonic presents no argument to the contrary. Once one puts aside the incorrect conclusion that a central unit's informing clients of which storage units contain desired segments makes the ContentServers not "independent," no argument has been presented to us for how MediaGrid could, under a proper claim construction, be found not to have the required "independent storage units." The patent's contemplated role for a central "catalog manager," as discussed above and reflected in claim 19, makes it anything but apparent how MediaGrid would fall outside this claim element without the legally erroneous construction. Given that, in response to Avid's argument, Harmonic has simply not suggested an alternative claim construction on this point, or argued that any such alternative claim construction could be found not to reach MediaGrid, satisfaction of this claim requirement is now settled. While infringement as a whole is to be retried, Harmonic's assertion of noninfringement based on this claim element is not, thus

narrowing the scope of issues for the new trial on remand.³

C

What remains is Avid's argument that it is entitled to more than a new trial—that it should be granted judgment as a matter of law. Avid Br. 51–62. Avid contends that, on the only other claim element in dispute, the "in files" element, the evidence does not allow a reasonable finding of non-infringement. We reject the contention. The case went to the jury without a construction of the key "in files" language, and Avid has not met its burden of showing that it has the only reasonable view of the claim element as long as it is un-construed.

In the claimed systems, "the data is stored on the plurality of storage units in files, wherein each file includes segments of data and redundancy information for each segment, wherein each segment has an identifier, and wherein, for each file, the segments and the redundancy information for each segment are distributed among the plurality of storage units." '808 patent, col. 28, lines 6–12 (emphasis added). See also '309 patent, col. 28, lines 58-65. On its face, the "file" language might refer to what the client treats as a "file," such as a scene from a movie, to be broken up into segments that are then distributed among storage units. J.A. 1943; J.A. 2327. Alternatively, the word "file" might refer to a feature of an organization system of the storage units themselves, perhaps with a single "file" at the storage-unit level including segments coming from different client files, i.e., from different

³ The jury rejected both direct and indirect infringement. Our vacatur covers all of those verdicts, because the indirect-infringement verdicts could have rested on the jury's finding of no underlying direct infringement.

movies. See '309 patent, col. 13, lines 61–65 ("The storage unit may have its own file system which may be entirely separate from the client file system. All of the segments on a storage unit may be stored, for example, in a single file at the storage unit."); '808 patent, col. 14, lines 1–5 (same); id., col. 28, lines 50–59 ("A file system for a computer, enabling the computer... to read data stored in one or more files on the storage units, wherein a file includes segments of the data and redundancy information for each segment..."); see also id., col. 10, lines 37–46; id., col. 14, lines 20–22; '309 patent, col. 10, lines 36–45; id., col. 14, lines 13–15 ("If the storage unit has its own independent file system, the client file system also need not know details of the storage mechanism of the storage units.").

The district court did not construe the phrase "in files" or, therefore, tell the jury whether all of the other requirements of the overall claim element must evaluated by looking at client-perspective files or storage-unitorganization files. J.A. 8. The court instructed the jury simply to give the phrase its "plain and ordinary meaning." J.A. 8; J.A. 39. It is not clear to us what the jury would have found "plain" and "ordinary" about this claim element. It is not even clear to us whether Harmonic has consistently argued for one interpretation or the other of "files" in this claim element See Harmonic Br. 14–16, 21– 24; J.A. 2318–19; J.A. 2328–30. But with the question framed without a clarifying construction, Avid has the difficult task of showing, based simply on the words, that the only reasonable view is that MediaGrid stores data in "files" that have all the features required by the claim element. We are not persuaded.

Harmonic presented evidence that MediaGrid's storing of individual client-file segments on its ContentServers may be considered as either not storing them "in files" or not doing so in a way that meets the other requirements of the overall "in files" claim element quoted above. Harmonic's expert, Dr. Levy, testified:

- Q. And why do you believe that a slice does not meet the requirements of a file in the claim?
- A. Well, first of all, the files stored in the ContentServers include only a single slice or segment of data. And in addition, what is stored in the ContentServers does not include redundancy information for the segment.
- Q. Let's take that one step at a time. Looking at the language of the claim, it says, wherein each file includes segments of data. Do you see that?
- A. Yes.
- Q. And that is segments, plural?
- A. Yes, it is.
- Q. Is a single slice, does that meet the requirements of a file?
- A. No. This requires segments, plural, so that is not what is stored in the ContentServer.
- J.A. 2326–27. Asked about a Harmonic document that says, "slices will be saved as individual files," which might suggest that at least storage-unit-level "files" are being used, Dr. Levy testified:
 - Q. And what does the claim require each file to include?
 - A. It requires each file to include segments, plural, of data.
 - Q. Does an individual slice include multiple segments, sir?
 - A. No.

J.A. 2401. See also A2738 (quoting from the testimony of Dr. Levy) ("What is your basis for the statement data is not stored on ContentServers in files?' Answer: 'Well, my basis is that the ContentServer stores slices of data and it does not store them in files in the manner in which the claims require.'").

Without a claim construction, we are not persuaded by Avid that the foregoing testimony is insufficient for a jury to find that the MediaGrid system does not satisfy the "in files" claim element. That is enough to deny Avid judgment of infringement as a matter of law. The case therefore must return to the district court for a new trial on infringement, within the limits already stated in this On remand the district court may consider whether the aim of claim construction—to give the finder of fact an understandable interpretation of claim scope to apply to the accused systems—would be advanced by further construing the "in files" claim element. To avoid confusion about our mandate but not as an affirmative suggestion, we add that in remanding for a "new trial" (with no retrying of the "independent storage units" claim element), we are not foreclosing any pre-trial resolution of the infringement issue that is otherwise appropriate substantively and procedurally. Cf. Medisim Ltd. v. BestMed, LLC, 758 F.3d 1352, 1361 (Fed. Cir. 2014).

CONCLUSION

The judgment of the district court is vacated, and the case is remanded for further proceedings consistent with this opinion.

Costs awarded to Avid.

VACATED AND REMANDED